

SKILLERMARK et al.
Appl. No. 10/720,691
May 4, 2007

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An interference cancellation method for a mobile station in a radio cell of a CDMA cellular system, ~~including the steps of comprising:~~
maintaining a list of intracell interferers in the CDMA cellular system to the mobile station;
detecting intercell interferers to the mobile station based on handover-related information determined by the mobile station;
adding ~~each one or more~~ detected intercell ~~interferer interferers~~ that fulfils a predetermined selection criterion to said list; and
performing, based on information ~~about associated with~~ the interferers in said list, interference cancellation for all interferers in said list.
2. Canceled.
3. (Currently Amended) The method of claim 1, ~~including the steps of comprising:~~
measuring received interfering signal power from intercell interferers using the same frequency band as the mobile station; and
adding to said list only intercell interferers having a measured received interfering signal power that exceeds a predetermined power level.
4. (Currently Amended) The method of claim 1, ~~including the steps of comprising:~~
determining the cross-correlation between a desired signal and signals from intercell interferers; and

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adding to said list only intercell interferers having a determined cross-correlation that exceeds a predetermined cross-correlation level.

5. (Currently Amended) The method of claim 1, including the following steps for each intercell interferer to be included in said list:

determining a channel estimate;

determining a channelization code;

determining a scrambling code; and

forwarding the determined channel estimate, channelization code and scrambling code to a joint detection algorithm used by all interferers in said list.

6. (Currently Amended) An interference cancellation apparatus for a mobile station in a radio cell of a CDMA cellular system, including comprising electronic circuitry configured to:

~~means for maintaining~~ maintain a list of intracell interferers in the CDMA cellular system to the mobile station;

~~means for detecting~~ detect intercell interferers to the mobile station based on handover-related information determined by the mobile station;

~~means for adding each~~ add one or more detected intercell interferer ~~interferers~~ that fulfils a predetermined selection criterion to said list; and

~~means for performing~~ perform, based on information about ~~associated with~~ the interferers in said list, interference cancellation for all interferers in said list.

7. Canceled.

8. (Currently Amended) The apparatus of claim 6, including wherein the electronic circuitry is configured to:

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~~means for received~~ receive interfering signal power from intercell interferers using the same frequency band as the mobile station; and

~~means for adding~~ add to said list only intercell interferers having a measured received interfering signal power that exceeds a predetermined power level.

9. (Currently Amended) The apparatus of claim 6, ~~including the steps of~~ wherein the electronic circuitry is configured to:

~~means for determining~~ determine the cross-correlation between a desired signal and signals from intercell interferers; and

~~means for adding~~ add to said list only intercell interferers having a determined cross-correlation that exceeds a predetermined cross-correlation level.

10. (Currently Amended) The apparatus of claim 6, ~~including the following steps wherein~~ for each intercell interferer to be included in said list, the electronic circuitry is configured to:

~~determining~~ determine a channel estimate;

~~determining~~ determine a channelization code;

~~determining~~ determine a scrambling code; and

~~forwarding forward~~ the determined channel estimate, channelization code, and scrambling code to a joint detection algorithm used by all interferers in said list.

11. (Currently Amended) A mobile station for a CDMA cellular system, including comprising:

means for maintaining a list of intracell interferers in the CDMA cellular system to the mobile station;

means for detecting intercell interferers to the mobile station based on handover-related information determined by the mobile station;

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means for adding each one or more detected intercell ~~interferer~~ interferers ~~that fulfils a~~
~~predetermined selection criterion to said list; and~~

means for performing, based on information ~~about~~ associated with the interferers in said
list, interference cancellation for all interferers in said list.

12. Canceled.

13. (Currently Amended) The mobile station of claim 10, including:

means for measuring received interfering signal power from intercell interferers using the
same frequency band as the mobile station; and

means for adding to said list only intercell interferers having a measured received
interfering signal power that exceeds a predetermined power level.

14. (Currently Amended) The mobile station of claim 10, including ~~the steps of:~~

means for determining the cross-correlation between a desired signal and signals from
intercell interferers; and

means for adding to said list only intercell interferers having a determined cross-
correlation that exceeds a predetermined cross-correlation level.

15. (Currently Amended) The mobile station of claim 10, including the following steps
for each intercell interferer to be included in said list:

means for determining a channel estimate;

means for determining a channelization code;

means for determining a scrambling code; and

means for forwarding the determined channel estimate, channelization code and
scrambling code to a joint detection algorithm used by all interferers in said list.